

IDAHO DEPARTMENT OF FISH & GAME

QUARTERLY COORDINATION REPORT

DINGELL-JOHNSON PROJECTS



1 June - 31 August 1976

by

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QUARTERLY COORDINATION REPORT

(1 June – 31 August 1976)

IDAHO DEPARTMENT OF FISH AND GAME

This quarterly report is intended to satisfy the requirements under project F-67-C-2. The material that has been included was abstracted from the research biologists' monthly narrative reports and briefly summarizes the work undertaken and results from each of these projects during the quarter.

F-18-R-23 - - STATEWIDE FISHING HARVEST SURVEY

Job 1. Estimates of the 1976 Harvest of Salmon and Steelhead

There were no field operations for this job during the quarter.

Job 3. Check Station Surveillance of Major Salmon and Steelhead Fisheries in Idaho

There were no field operations for this job during the quarter.

F-49-R-15 - - SALMON AND STEELHEAD INVESTIGATIONS

Job 1-a. Salmon Spawning Ground Surveys

Redd counts are way down this year, but jacks are very abundant. A partial summary for the Salmon river follows:

<u>Stream</u>	<u>1976</u>	<u>5-year average</u>
Alturas Lake Creek	16	91
Bear Valley Creek	76	212
Big Creek	22	59
Elk Creek	61	206
Herd Creek	27	37
Loon Creek	31	79
Marsh Creek drainage	48	355
Salmon River (upper)	378	510
Salmon River (lower)	44	209
Salmon River (upper East Fork)	75	459
Salmon River (Middle Fork)	6	30
Salmon River (North Fork)	6	50
Sulfur Creek	14	57
Valley Creek (upper)	10	145
Valley Creek (lower)	43	70
Yankee Fork (upper)	40	79
Yankee Fork (lower)	3	59
Yankee Fork (West Fork)	11	73

Job 3-b. Evaluation of Survival of Pond Reared Chinook Salmon

It appears that we are down considerably on our spawning escapement and kelts are hard to find. Evaluation will be completed in September and reported in the next quarterly report.

F-53-R-12 - - LAKE AND RESERVOIR INVESTIGATIONS

Job 3-c. Evaluation of Fish Populations in Anderson Ranch Reservoir

and

Job 3-d. Experimental Introduction of Smallmouth Bass into Anderson Ranch Reservoir

During the census interval from 29 May through 25 June, we interviewed 544 boat anglers and 92 bank anglers at Anderson Ranch. Kokanee were the most common catch for boat anglers at a rate of .71 caught per hour while bank anglers caught mainly rainbow at a rate of .35 per hour. We checked 60 smallmouth bass taken primarily by boat anglers ranging in total length from 150 to 485 mm (6-9 in). Other species harvested in lower numbers were Dolly Varden, yellow perch, squawfish and suckers. The upper portion of the reservoir from Lime Creek to Pine was most popular with anglers and produced the best catches of kokanee. Harvested kokanee ranged in total length from 170 to 324 mm (7-13 in) and averaging 268 mm (10.5 in).

Water temperature at the surface climbed rapidly during June reaching about 20 C (68 F) by the end of the month. Along with the rising water temperatures, the plankters daphnia and Bosmina increased to high levels of 12 and 16 plankters per liter, respectively, by late June.

Kokanee angling success slowed in July as catch rates dropped to .53 fish per hour from the June rate of .63 fish per hour. Catch rates during a similar time period in 1975 reached .85 kokanee per hour. We interviewed 763 anglers during the census interval 26 June through 23 July.

Estimated angler effort and harvest for census interval 29 May through 25 June 1976 are 13,274 angling hours and 6,985 kokanee harvested compared to 4,787 hours and 1,585 kokanee during a similar time period in 1975.

We searched most of the major bays and coves from the narrows to the dam for evidence of successful smallmouth bass spawning in mid-July. Using swim mask and snorkel we found abundant smallmouth bass fry in most of the bays and coves; and some sub-adult or adult bass were seen in every area surveyed. The bass fry were seen in areas varying from coarse rubble to fine gravel, but preferred areas with some cover available.

We estimated 36,369 angling hours at Anderson Ranch for the time period 29 May through 20 August. Anglers harvested 19,493 kokanee at .54 fish per hour, 1,848 rainbow at .05 fish per hour, and 723 smallmouth at .02 fish per hour. Kokanee catch rates and harvest declined compared to 1975, however, catch rates and harvest of rainbow and smallmouth increased.

Job 4-a. Lake Pend Oreille Creel Census

Kokanee fishermen found angling for kokanee slow during June. Hand-lining was slow on the north end of the lake, while trolling was poor on the south section. There were 1,087 anglers interviewed that had fished 4,330 hours and caught 4,205 kokanee. This represented a catch rate of 1.0 kokanee per hour and 3.9 kokanee per angler per day. This catch rate compares to 2.0 kokanee per hour and 8.5 kokanee per angler during June, 1975. The best fishing was from Garfield Bay to Talache. Kokanee length measurements taken during June at the south end of the lake showed an average of 218 mm (8.6 in).

Kokanee angling success declined slightly in July. Anglers averaged 0.9 kokanee per hour and 3.4 kokanee per angler for a day's fishing. Anglers had averaged 1.0 kokanee per hour in July, 1975. There were 1,722 anglers checked that had fished 6,726 hours and caught 5,818 kokanee. The best fishing was from Anderson Point to Sunnyside and near Lee's Point. Kokanee averaged 215 mm (8.5 in) from length measurements taken in July on the north end of the lake.

Kokanee anglers were able to average 2 fish or better per hour for the first time since January. They averaged 2.2 fish per hour in August compared to the 2.2 fish per hour for August, 1975. There were 1,561 kokanee anglers checked that had fished 6,393 hours and caught 13,919 kokanee. This was an average of 8.9 kokanee per angler per day. The best fishing was from Kilroy to the Clark Fork River and near Trestle Creek. The area near Umbrella Point also produced well. Kokanee measurements taken showed kokanee averaging 218 mm (8.6 in) on the south end while they averaged 216 mm (8.5 in) on the north end.

Kamloop fishing was very good during June. The largest fish caught was 12.9 kg (28 lb, 6 oz). This fish was caught near Windy Point, and was a fish that had spawned this spring. There were 587 anglers seeking Kamloops who expended 3,217 hours of effort and caught 67 Kamloops (an average of 48 hours per fish). It took 62 hours to land one of these fish in June, 1975. Most of the Kamloops were caught from Cedar Creek to Granite Creek in early June, and from Granite Creek to Indian Point in the last part of June.

Kamloop angling success declined greatly in July. There were 491 anglers seeking Kamloops and they had fished 2,528 hours and caught 23 Kamloops. Anglers caught one Kamloop for 109.9 hours of effort. This compares to 52.2 hours in July, 1975. The best fishing was from Windy Point to Deadman Point. The largest Kamloop caught was 10 kg (22 lb).

Kamloop fishing improved a little in August. There were 211 anglers seeking this species who had fished 1,061 hours and caught 13 Kamloops (an average of 81.7 hours per Kamloop). This compared to 87.6 hours per Kamloop in August, 1975. The best angling occurred between Windy Point and Deadman Point. The largest Kamloops caught was 8.2 kg (18 lb).

Estimated minimum fishing pressure, effort and harvest for the first five census periods (13 January – 30 August) is as follows:

Angler man-days	37,263	Lake whitefish	103
Hours fished	166,401	Perch	149
Kokanee	146,003	Crappie	15
Cutthroat	708	Brown trout	4
Dolly Varden	975	Hybrid trout	70
Rainbow	4,809	Brown bullhead	11
Moutain whitefish	99	Nongame fish	267

Job 4-c. Kokanee Spawning Trends

There were no field operations for this job during the quarter.

Job 4-d. Lake Pend Oreille Limnological Studies

We completed the evaluation of Mysis shrimp samples collected at Lake Pend Oreille in June. On the lakes south end we captured a fantastic 191,339 shrimp in five 10-minute trawls averaging 84.1 Mysis per cubic meter. On the north end, 38,929 shrimp were captured in five 10-minute trawls that averaged 17.1 Mysis per cubic meter. The lake yielded an average of 50.6 Mysis per cubic meter. This was nearly a 5-fold increase over the high yield of 1975 and the largest average yield recorded to date at any of our sampled lakes. The following table depicts Pend Oreille Lake's dynamic increase of Mysis shrimp densities (m³) following introduction:

1969	-	0.0
1971	-	0.0
1972	-	0.1
1973	-	1.0
1974	-	1.2
1975	-	11.0
1976	-	50.6

The increased yield in 1976 resulted from the myriads of young-of-the-year shrimp produced on the south end of the lake. These juveniles averaged 86 and 80% of the counts on the south and north ends of the lake, respectively.

The highest ratio of juveniles to adults was recorded at Contest Point on the north end. A 4 milliliter count showed 698 juveniles (95%) vs. 33 adults (5%) or a ratio of 21.2:1.

The largest yield of shrimp was captured off Cape Horn Resort. The area produced 535 grams (69,550 shrimp) or 152.9 Mysis per cubic meter.

Job 4-e. Lake Pend Oreille Kokanee Life History Studies

We completed our regularly scheduled echosounding for June on Pend Oreille despite wind conditions that blew us off the lake several nights.

Distribution of fish targets appeared typical for the early summer period. Their horizontal distribution was somewhat clumped and their vertical distribution ranged from 5 to 20 m (16-66 ft). We recorded many surface oriented targets, 0-10 m (0-33 ft) that subsequent sampling revealed to be Mysis shrimp. The echograms showed high concentrations of Mysis generally throughout the entire lake.

During July fish targets were heavily concentrated between 20 and 30 m (66-98 ft) and distributed relatively even throughout the lake.

Fish targets during August were heavily concentrated between 20 and 30 m (66-98 ft) and distributed relatively even throughout the lake. Subsequent to the plankton sampling we noted that the fish targets were mostly distributed between 6 and 12 m (20-39 ft) during daylight.

Job 4-f. Lake Pend Oreille Kamloops Life History Studies

We trapped downstream migrating Kamloops fry in the North Fork of Grouse, Spring, and Lightning creeks. Fry began moving in the North Fork in mid-July with upwards of 1,000 fry per day being trapped. Only a few fry have been trapped in Spring and Lightning creeks. The data suggests that Kamloops fry migrate into the lower reaches of the stream drainages to rear before moving into the lake.

Job 4-g. Separation of Kamloops Stocks in Pend Oreille Lake by Electrophoresis

Laboratory work continued during the quarter and results may be ready for the next quarterly report.

Job 14-a. Separation of Henrys Lake Cutthroat and Hybrid Trout by Morphological Characteristics and by Electrophoresis

Laboratory work continued during the quarter and results may be ready for the next quarterly report.

Job 14-b. Evaluation of Henrys Lake Management Program

For the first 28 days of the 1976 fishing season at Henrys Lake, anglers fished an estimated 20,646 hours and harvested an estimated 5,639 cutthroat, 11 F₁-hybrids and 1,431 brook trout (a total harvest of 7,081 trout). This compares with 26,453 angler hours estimated for the first census period in 1975 when 9,263 trout were harvested. The catch rates for trout harvested in the first month of both years were nearly identical, 0.35 and 0.34 trout/hour in 1975 and 1976, respectively. However, counting trout released by anglers this year, the catch rate thus far for 1976 is 0.46 trout per hour.

The average total length and weight of cutthroat harvested during the first two census periods this year was 407 mm and 797 g (16 in and 1.75 lb). Brook trout, which comprised 20% of the harvest, averaged 370 mm (14.6 in) in total length. Eleven marked cutthroat from the hatchery spawning run were estimated in the total harvest.

For all anglers interviewed (which may not be completely representative of the true proportion of residents to nonresidents using the lake): 26% of

the hours fished were by resident anglers living within 100 miles of Henrys Lake, 47% by residents living beyond 100 miles and 27% by nonresidents. Non-residents had the highest catch rate and local residents had the lowest. The reduced total pressure on the lake and the apparent reduction in nonresident fishermen during this period may be the combined results of this year's stricter regulations and the Teton flood disaster.

From opening day through 23 July (the first 4 census periods), we interviewed over 11% of the total estimated angler hours fished on Henrys Lake. Estimates from these interviews indicated that anglers fished a total of 41,908 hours to harvest 9,868 cutthroat, 13 F₁-hybrids and 2,119 brook trout (17.7% of the total harvest). Less than 1% of the cutthroat harvested were spawners in the 1976 Hatchery Creek run. The overall catch rate for trout harvested during the first 8 weeks of the season was 0.29 trout per hour. Counting reported catch-and-release fishing, the catch rate rose to 0.44 trout per hour. During the latter part of this interval, nearly all fishing was occurring at or near Staley Springs with some lighter pressure at the mouths of the other tributaries. The best fishing was by fly fishermen using damselfly nymph imitations.

The average total length and weight of cutthroat harvested through 23 July was 414 mm (16.3 in) and 804 g (1.77 lb). F₁-hybrids averaged about 540 mm (21.3 in) and 1,645 g (3.62 lb) while brook trout averaged 373 mm (14.7 in) and about 645 g (1.4 lb).

For the 4,407 angler hours interviewed during the first 8 weeks of the season, 20% were fished by resident anglers living within 100 miles of Henrys Lake, 33% by all other resident anglers and 47% by nonresident anglers.

During August the one-fish limit began on the lake. For the entire month, fishing pressure was off by 40% from last year and the harvest was down by 83%. Nearly all fishing occurred at Staley Springs, and near the mouths of Duck, Hope, and Howard creeks. Nearly all fishermen used flies, about 78% were nonresidents, and catch-and-release was the order of the day.

Job 14-c. Limnological Characteristics of Henrys Lake

Initial sampling of temperatures, dissolved oxygen and zooplankton were begun in June. At the open water station, the temperature was 65 F at the surface and 64 from there to the bottom. Dissolved oxygen varies from 6 to 9 ppm and large amounts of photoplankton made quantitative zooplankton determinations difficult.

We took temperature and oxygen samples near several of the Henrys Lake tributaries on 27 July in order to help characterize their influence on the lake's limnology. Samples within Staley Springs indicated a profound influence on the trout habitat in and near that area. Surface temperatures were quite consistent throughout the lake, but in Staley Springs where the depth was 8 to 10 feet, there was a temperature gradient of 14 F from top to bottom (50-64 F) with 13 F difference occurring in the bottom 3 feet. Following the channel out from Staley Springs revealed a 6 F differential still existed at about 400 yards from the main springs. By contrast, the open water station (18 foot depth) showed only a 2 F differential from top

to bottom. The other tributaries also showed a lesser influence on the temperature gradient of the lake near their mouths. Mainly because they emptied into much shallower areas. Oxygen determinations showed at or near saturation values for all areas and depths sampled (7-9 ppm).

Limnological data collected during August showed that the near surface temperature of the lake varied from a daily low of 58 to 65 F to a daily high of 62 to 71 F. Oxygen levels remained at or near saturation at all depths and large blooms of phytoplankton were present throughout the month (predominately Gloeotrichia at the west end of the lake and Aphanizomenon at the east end).

Job 14-d. Angler Opinions, Attitudes and Preferences at Henrys Lake

The results of the first two periods of the Henrys Lake questionnaire indicate that:

- 1, The average response of 323 anglers rated their fishing experience at Henrys Lake this year as "fair" to "good" (2.4 on a scale from 1 = "excellent" to 4 = "poor").
2. Anglers chose brook trout as their first preference of trout to catch at Henrys Lake.
3. Of 319 anglers interviewed, 52% expressed a desire to see Henrys Lake managed for larger fish even if it meant a reduced catch rate, 41% desired a quantity type fishery (1-1 ½ lb fish with more generous limits) and 7% were undecided.

Coincidentally with a decrease in the fishing success of nearly all those other than the fly fishermen, anglers rated their fishing experience at Henry slake only slightly higher than "fair" during the third census interval. Overall, brook trout were still rated as the most desirable fish to catch at Henrys Lake.

However, of those familiar with all three species, hybrids were rated on top with brook trout second, while of those anglers unfamiliar with all three species, cutthroat were rated as most desirable with brook trout again in second place. Larger, trophy size fish were desired by 74% of the anglers interviewed during period 3, and 73% of the anglers were satisfied with this year's regulations.

Very few interviews were obtained during August. Not only was the angling pressure very low, but a large percentage of the anglers were those fly fishermen who stay on the lake for much of the summer and who had already been interviewed in an earlier period. A large majority of those anglers fishing the lake were oriented toward a catch-and-release fishing and generally approved of the tightened restrictions if they would help produce larger fish. Anglers who were not oriented toward a catch-and-release fishery either did not come to Henrys Lake or generally did not remain there long.

While many anglers approved on the one-fish limit in general it is not a well conceived regulation as it now stands. Anglers unaccustomed to releasing their fish generally would retain their limit while continuing

to fish, while even some anglers who regularly released their catch would be guilty of the same thing and thereby be in a situation where a violation for killing of game fish or overlimit was fairly likely. A two-fish limit would allow for keeping one fish to each (which many people did without complaint of bad taste) while leaving one slot open for a hooking mortality or trophy catch. A regulation requiring anglers to cease fishing upon retaining their limit or at least switching to a single barbless hook on fly or lure might also be in order.

Job 25-a. Little Camas Reservoir Fisheries Investigations

Catch rates for the second census interval (29 May through 25 June) at Little Camas reached .62 rainbow per hour for boat angling and .17 rainbow per hour for bank angling. We interviewed 399 boat anglers and 585 bank anglers during the interval. Most of the rainbow harvested during the latest census interval were planted as catchables this year (51%) or planted as fingerlings in 1975 (24%) whereas fingerlings planted in 1975 comprised 42% of the catch during the May census interval. The 1975 fingerling rainbow averaged 332 mm (13 in) total length during the latest census interval compared to 292 mm (11.5 in) during the May interval. The harvest of tagged catchables planted in 1975 dropped from 16% of the harvest during the May census interval to 6% of the harvest during the latest interval.

A comparison of angling effort and harvest at Little Camas for two similar time periods in 1976 and 1975 is shown below:

<u>Estimated angler effort (1976)</u>		<u>Estimated angler effort (1975)</u>	
(5-1 through 5-28	21,140 hours	(4-26 through 5-23)	9,130 hours
(5-29 through 6-25)	14,274 hours	(5-24 through 6-20)	9,542 hours
<u>Rainbow catch rate (1976)</u>		<u>Rainbow catch rate (1975)</u>	
(5-1 through 5-28)	.17 per hour	(4-26 through 5-23)	.23 per hour
(5-29 through 6-25)	.35 per hour	(5-24 through 6-20)	.20 per hour
<u>Rainbow harvest (1976)</u>		<u>Rainbow harvest (1976)</u>	
(5-1 through 5-28)	3,556 fish	(4-26 through 5-23)	2,099 fish
(5-29 through 6-25)	4,891 fish	(5-24 through 6-20)	1,874 fish

Most of the rainbow harvested during the first census interval this year were introduced as fingerlings in June, 1975; however, since early June, anglers have taken mostly catchables planted this year. In a similar time period in 1975 the rainbow harvest was primarily from fish planted as catchables or fingerlings prior to 1975. The increased harvest of recently planted catchables this year can be attributed to either the heavier planting of catchables or different water and weather conditions.

Anglers fished an estimated 55,362 hours during the period 1 May through 20 August and harvested 15,302 rainbow trout at an average catch rate of .28 fish per hour. Angling effort increased 25% over a similar time period in 1975 and harvest increased 43% this year.

Creel return of hatchery catchables introduced in 1975 was 48% 15 months later while 11% of fingerlings planted in 1975 had been harvested 15 months later.

Job 27-a. Salmon Falls Creek Reservoir Fisheries Investigations

There were no field operations for this job during the quarter.

F-59-R-8 - - CATCH AND RELEASE STUDIES

Job 1. Evaluation of Angling Regulations in Management of Cutthroat Trout

No field operations were undertaken for this job during the quarter. The completion report is in the process of being completed.

F-66-R-2 - - RIVER AND STREAM INVESTIGATIONS

Job 2. Selway River Fisheries Investigations

The Selway River and tributaries remained too high during June for effective snorkeling. We did make a backpack trip up the Selway to Power Creek on 15 and 16 June. We tagged five cutthroat above Cupboard Creek, but were unable to snorkel because of high flows.

Snorkeling investigations and cutthroat tagging on the Selway River tributaries during July covered the following streams: Little Clearwater River, Deep Creek, Bear Creek, Pettibone Creek and Pitch Creek. Snorkeling data is as follows:

<u>Stream</u>	<u>Date</u>	<u>Species counted</u>				<u>Percent of Ct over 12"</u>	<u>Water temp. (F)</u>	<u>Number of transects</u>
		<u>Rb</u>	<u>Ct</u>	<u>DV</u>	<u>Wf</u>			
Little Clearwater River	7/7	2	38	0	0	7.9	48	5
Deep Creek	7/8	8	26	0	1	11.5	60	5
Bear Creek	7/13	4	5	0	31	0.0	54	5
Pettibone Creek	7/19	20	6	0	0	16.6	59	4
Ditch Creek	7/20	-	-	-	-	-	55	0

Between 2-7 August 1976, we floated the Selway River from Running Creek to Race Creek. We snorkeled 10 transects from Running Creek to Moose Creek and eight from Moose Creek to Cascade Creek. From Running Creek to Moose Creek we counted 65 wild rainbow, 61 cutthroat trout, 7 juvenile chinook, 2 Dolly Varden and 75 whitefish. From Moose Creek to Cascade Creek we counted 122 wild rainbow, 68 cutthroat, 10 juvenile chinook, 0 Dolly Varden and 142 whitefish. Personnel of the float trip fished a total of 130 hours and caught 365 wild rainbow (2.8 per hour), 231 cutthroat (1.8), 6 Dolly Varden (0.05) and 76 whitefish (0.58). In 1975, we caught wild rainbow at a rate of 2.2 per hour and cutthroat at 1.2 per hour. The cutthroat caught in 1976

averaged 258.5 mm (10.2 in) compared to 226.3 mm (8.9 in) in 1975. The percent of cutthroat estimated to be over (12 in) in our snorkel transects increased from 13% in 1975 to 21% in 1976.

On 11 August, we snorkeled five transects in the Selway from White Cap Creek to Running Creek and counted 20 wild rainbow, 36 cutthroat trout, 4 juvenile chinook, 0 Dolly Varden and 89 whitefish. We also fished 2.5 hours and caught 2 rainbow, 12 cutthroat and 2 whitefish. Twenty-two percent of the cutthroat seen were over (12 in).

On 12 August, we snorkeled two transects in the Selway from Deep Creek to White Cap Creek and counted 8 wild rainbow, 8 cutthroat, 58 juvenile chinook, 2 Dolly Varden and 27 whitefish. None of the cutthroat seen were over (12 in).

On 13 August, we snorkeled four transects in the Selway from Cascade Creek to Race Creek and counted 49 wild rainbow, 21 cutthroat and 18 whitefish.

On 19 August, we snorkeled six transects in the Selway from Thompson Flat to Magruder and counted 15 wild rainbow, 27 cutthroat, 1 Dolly Varden and 1 whitefish. Between 18 and 20 August, we fished a total of 9 hours in this section of the Selway and caught 91 wild rainbow, 46 cutthroat, 1 Dolly Varden and 2 whitefish.

Job 3-b. Silver Creeks Fisheries Investigations-Fish Distribution and Abundance Survey

and

Job 3-d. Silver Creek Fisheries Investigations-Food Availability and Utilization by Trout

In continuing our food habit and food availability study, we collected 48 benthos samples from 8 stations on Silver Creek and its tributaries and five 24-hour drift samples to determine food availability. We also collected rainbow trout stomachs from the 8 stations to determine food consumption. We are now analyzing these and other samples collected from Silver Creek and its tributaries Loving, Grove and Stalker creeks.

During our April-May sampling period we captured 7 hatchery trout from Silver Creek and 2 hatchery trout from Loving Creek that were tagged and planted in 1975. These fish were poor in condition, averaging .94 K factor, but were equal to or better conditioned than the captured wild trout. A low body condition is expected on trout that have overwintered, but in 1977 we plan to investigate if the ice cover and ice melt, as sometimes occur on Silver Creek, decreased the available fish food to very low levels during late winter.

We electrosampled our five study areas on Silver Creek and also Stalker, Grove (and its tributary Wilson Cr.) and Loving creeks. We have not completed

analysis of our data yet, but we feel most differences in numbers of adult fish from our spring sample is related to shocking efficiency. We found few fish in the area from Kilpatrick Bridge downstream to Highway 68 bridge in the spring, but found many rainbow here during the July sample period. We believe we were more efficient shocking in July with the aquatic vegetation than in the spring when little vegetation was present. We continued to find few trout from Lower Priest Campground downstream to Silver Falls.

Our summer assessment of the fish populations in the tributaries of Silver Creek indicate that Grove, Wilson and Loving creeks are important and successful as spring spawning grounds and nursery areas. We found large numbers of young-of-the-year fry and fingerlings in these tributaries. We do not know if these young eventually drift down to Silver Creek, but we should investigate this possibility.

During August we collected 48 surber samples from 8 stations on Silver Creek and its major tributaries, and seven 24-hour drift samples to determine food availability. Rainbow trout stomachs were also collected to determine food consumption.

We continued working on field data and preparing for the fishery personnel meeting. In summarizing our spring and summer sampling periods, we captured nine fish species from Silver Creek and the three study tributaries.

A large percentage of our wild rainbow samples in the three tributaries were young-of-the-year fry. Grove Creek, in particular, containing large numbers of trout fry and has good spawning gravel and excellent rearing areas. We captured fewer numbers of young trout in Silver Creek proper, particularly the sections below Kilpatrick Bridge.

Job 4. Lochsa River Fisheries Investigations

A combination of rainy weather and high stream flows kept fishing pressure very light on the Lochsa River during June. Weekday counts ranged from 0 to 6 anglers and weekend day counts 0 to 22 anglers for the entire 75 miles of stream. During June we interviewed 81 anglers who had fished 97 hours for 16 wild rainbow, 3 hatchery rainbow, 0 cutthroat, 8 Dolly Varden 14 whitefish and 2 suckers. Catch rates were 0.41 and 0.68 fish per hour for all species combined during the first two census intervals. Idaho residents comprised 87.6% of the anglers interviewed on the Lochsa in June. Of the anglers interviewed, 51.8% used bait, 32.1% lures' and 16.% flies. When asked to rate fishing on the Lochsa, 6.1% rated it good, 20.4% fair and 73.5% poor. Fifty-two percent of the anglers interviewed preferred to catch a few large fish, while 48% preferred many small fish. Over 70% were in favor of some type of restrictive limit to restore cutthroat on the Lochsa. Sixty-two percent were in favor of an 8-inch minimum size limit to protect juvenile steelhead in the Lochsa.

Better weather and lower flows on the Lochsa River during July resulted in much improved fishing as compared to June. The overall average catch rate for all species was 0.87 fish per hour on the Lochsa in July compared to 0.44

fish per hour in June. During July we interviewed 247 anglers who had fished 466 hours to catch 274 wild rainbow-steelhead (0.59 per hour), 65 hatchery rainbow (0.14 per hour), 20 cutthroat (0.04 per hour), 7 Dolly Varden (0.01 per hour) and 40 whitefish (0.09 per hour). Idaho residents comprised 81.0% of the anglers interviewed on the Lochsa during July and 87.6% during June. Of the anglers interviewed, 42.0% used bait, 26.5% lures and 31.5% flies. When asked to rate fishing on the Lochsa, 22.9% rated it good, 35.9% rated it fair and 41.2% poor. Over 46% of the anglers interviewed preferred to catch a few large fish, while 53% preferred many small fish. Fifty-seven percent were in favor of some type of restriction to restore cutthroat trout to the Lochsa and 60% were in favor of an 8-inch minimum size limit to protect juvenile steelhead.

On 13 July we snorkeled the established transects in Papoose and Squaw creeks on the Lochsa. We snorkeled three transects in Papoose Creek and saw 24 wild rainbow and seven cutthroat trout. Two transects in Squaw Creek revealed 39 wild rainbow, 1 hatchery rainbow, 2 cutthroat and 1 Dolly Varden.

As of 19 July, we had tagged 32 cutthroat trout in Pack Creek, 3 in White Sand Creek and 12 in Brush Fork Creek (Lochsa tributaries). Average total lengths of cutthroat caught in these streams were 146 mm, 152 mm and 131 mm, respectively.

During August, we interviewed a total of 334 anglers who had fished 528.5 hours on the Lochsa River and caught 549 wild rainbow (1.04 per hour), 118 hatchery rainbow (0.22), 24 cutthroat (0.05), 4 Dolly Varden (0.01) and 8 whitefish (0.02). Idaho residents comprised 73.0% of the anglers interviewed on the Lochsa during August, 81.0% during July and 87.6% during June. Of the anglers interviewed during August, 44.8% used bait, 17.2% lures, and 38.0% flies. When asked to rate fishing on the Lochsa, 28.0% rated it good, 48.4% fair, and 23.6% poor. Over 54% of the anglers interviewed preferred to catch a few large fish, while 46% preferred many small fish. Forty-seven percent were in favor of some type of restriction to restore cutthroat trout to the Lochsa and 56% were in favor of an 8-inch minimum size limit to protect juvenile steelhead.

On 10 August 23 snorkeled six transects in the Lochsa River and counted 8 wild rainbow (3-8 in), 8 hatchery rainbow, 52 whitefish, 6 squawfish and 20 suckers. We also snorkeled one transect in Crooked Fork and saw 15 wild rainbow (0-3 in), 4 wild rainbow (3-8 in), 5 hatchery rainbow, 3 cutthroat, 2 Dolly Varden and 3 whitefish. On 25 August 23 snorkeled 2 transects in Crooked Fork, 4 in Papoose Creek and 3 in Squaw Creek. In Crooked Creek we counted 47 wild rainbow (0-3 in), 33 wild rainbow (3-8 in), 6 hatchery rainbow, 1 Dolly Varden and 3 whitefish. In Papoose Creek, 13 wild rainbow (0-3 in), 21 wild rainbow (3-8 in) and 31 cutthroat were seen; and in Squaw Creek we counted 39 wild rainbow (0-3 in) and 5 wild rainbow (3-8 in). On 30 August we snorkeled two transects in the Lochsa River and counted 12 wild rainbow (3-8 in), 28 hatchery rainbow, 99 whitefish, 5 squawfish and 1 sucker.

Job 5. South Fork Boise River Fisheries Investigations

Angler participation was low during the first census interval (5/29

through 6/25) on the South Fork probably because of high water and possibly because of the new regulations in effect. We interviewed 190 anglers during the interval who caught rainbow at the rate of .73 fish per hour. About 82% of the rainbow caught were reportedly released by anglers. Most anglers interviewed (81%) were in favor of managing the stream for quality rainbow fishing without hatchery stocking and supported the new regulations. About half the anglers interviewed fished with lures and spinning gear while the remainder fished with fly rods and flies. Local anglers from Boise and Mountain Home dominated the interviewees.

Creel census data collected from 29 May through 20 August 1976 in the South Fork indicate a reduction in both catch and effort over 1974. Particularly evident was the increase in fish caught and released, and the decrease in harvest of wild rainbow over 1974. The overall catch rate for rainbow showed a very slight increase from .70 to .73 over 1974. The new regulations have reduced effort by half and caused a significant reduction in harvest of wild fish while maintaining acceptable catch rates.

A comparison of angling effort and harvest on the South Fork (Anderson to Danskin) for similar time periods in 1974 and 1975 is shown below:

<u>Estimated angler effort (1976)</u>	<u>Estimated angler effort (1974)</u>
(5-29 through 6-25) 3,241 hours	(5-25 through 6-21) 2,920 hours
<u>Rainbow catch rate (1976)</u>	<u>Rainbow catch rate (1974)</u>
(5-29 through 6-25) .72/hour	(5-25 through 6-21) .60/hour
<u>Estimated rainbow harvest (1976)</u>	<u>Estimated rainbow harvest (1974)</u>
(5-29 through 6-25) 424	(5-25 through 6-21) 1,758 total
Released <u>1,900</u> (82%)	None reported <u>released</u>
Total catch 2,324	Total catch 1,758
Estimated wild rainbow kill - - 350	Estimated wild rainbow kill - - 986

If any judgment can be made from the first data available for this year, it is that the new regulations are doing a good job of reducing the actual harvest of wild rainbow while maintaining acceptable catch rates without introduction of hatchery catchables.

Job 6. Wolf Lodge Creek Cutthroat Trout Studies

No report from this project during the quarter.

Job 7. Henrys Fork Fisheries Investigations

Estimates obtained by fishermen counts and creel census were completed for the first 28 day interval (29 May-25 June) and were as follows: All

anglers fished an estimated 50,984 hours to harvest 56 cutthroat, 3,061 brook trout, 9,674 wild rainbow, 1,711 hatchery rainbow and 1,637 hybrids. Fishermen caught and released an estimated 22,210 trout (over one-third on the Railroad Ranch) and also caught 2,176 whitefish. The percent of total estimated angler hours interviewed for the entire 13 sections was 4.0%; ranging from a low of 0.86% in section 3 to a high of 7.1% on section 9 which had the highest fishing pressure of any section on the river. Difficulties created by the Teton flood disaster and bad weather on several of the scheduled aerial count days increased the accuracy of the first period estimates.

No adipose clipped hatchery fingerlings were seen during the first census interval.

During the second census period on Henrys Fork (26 June – 23 July) anglers fished an estimated 46,680 hours to harvest 250 cutthroat, 4,022 brook trout, 17,824 wild rainbow, 10,468 hatchery catchables, 119 hatchery fingerling plants, 1,810 rainbow with a red slash under the jaw (possible hybridism) and 13 kokanee. The overall catch rate for trout harvested was 0.92 trout per hour. An estimated 34,277 trout were caught and released during this period which would raise the catch rate for salmonids to 1.47 trout per hour (I believe that most fishermen overestimate the number of fish they have released, especially if they have released more than 5 or 6 fish and have been fishing for several hours before being interviewed).

Section 13 above Macks Inn received more angler use than any other area (9,301 angler hours) with the Railroad Ranch (Section 9) second with 8,385 angler hours. Section 2 below Ashton Power Dam accounted for the most use of those sections below Railroad Ranch (3,468 angler hours).

For the heavily fished area above Macks Inn: 1% of the harvest was cutthroat, 38% brook trout, 26% wild rainbow, 33% hatchery catchables and 1% hatchery fingerling plants. The average size of all trout caught was about 230 mm (9 in).

Due to budget restrictions, August was the final month of creel census for this project. The area below Ashton (open year-round) appears to be the healthiest section of the censused portion of Henrys Fork, while the heaviest pressure continues to occur on the upper sections.

F-67-C-2 - - FISHERY RESEARCH SUPERVISION

The Fishery Research Supervisor spent the quarter supervising the eight Dingell-Johnson projects with their 29 separate jobs.

The Fishery Management Supervisor spent the quarter assisting with initiation of a new fishery management investigations project with its many jobs.

F-68-R-1 - - TEST REARING OF SPRING CHINOOK SALMON

The project was terminated on 30 June 1976 and the completion report is in draft form.

F-69-R-2 - - STREAM FLOW INVESTIGATION

Job 1. Evaluation of Applicability of Water Surface Profile Predictive Modeling in Reference to Stream Resource Maintenance Flow Determinations

and

Job 2. Stream Resource Maintenance Flow Determination on Idaho Streams

We continued to catch up on the backlog of stream data for the computer program. Willow Creek, South Fork Boise River, and Wolf Lodge Creek data have been coded and sent in for initial computer runs. Flow recommendations for Lower White Springs have been completed.

Familiarized personnel from Region 1 and 4 with the techniques used in collecting stream flow data. Bill Goodnight, Gregg Mauser, and Bob Bell are now stream flow experts. Initial flow data have been collected on Wolf Lodge Creek and Big Wood River. We collected data for use in the water surface profile computer program on both of these streams.

The agenda for July includes starting on the Snake River and familiarizing personnel from Region 6 and 5 on collecting stream flow data.

We familiarized Region 5 and 6 personnel with instream flow techniques. Kent Ball collected data on the Lemhi River and John Heimer collected data on St. Charles Creek. A visit to previously established transects on the Big Wood River revealed that the Big Wood Canal Company had diverted the entire river flow into irrigation canals. Further data collection on the Big Wood will continue after the irrigation season.

The 1976 Stream Resource Maintenance Flow Studies report was completed.

A slide presentation was presented to personnel of the Idaho Department of Water Resources detailing the activities of the past year and the status of our present program.

We established new transects at 7 sites on the Snake River. These were located downstream of Milner Dam, at King Hill, below Boise River confluence, below Payette River confluence, below Weiser River confluence, at Walter's Ferry, and downstream of Swan Falls Dam.

The agenda for August includes completion of the regional managers' program, collection of as much data as possible on the Snake River, and a Selway River float trip. Over 200 cutthroat trout were captured, measured, and tagged on the float trip.

We established four new flow measuring transects on the Snake River. These were located below American Falls Dam, C. J. Strike Dam, above the Owyhee River mouth, and at Oasis above the Brownlee pool flowline. We continued to collect water surface elevations on the Snake below Milner for use in determining the reliability of the water surface profile program on

large rivers. We attempted to establish transects below Brownlee and Oxbow dams, but the water elevations of the pools did not leave significant free flowing stream sections. We continued to code Snake River data for input into the computer.

We collected stream flow data for Kent Ball on the Lemhi River.

Wes Cannon and Steve Hoss was familiarized with the methods used in collecting stream flow data. The Lochsa and South Fork Clearwater rivers were too high for wading. They will start measuring stream flow parameters early in September.

We collected bottom samples and fish stomachs on Silver Creek.

The agenda for September includes coding Snake River data and completing the regional fishery manager familiarization program.